

### **REMARKS/ARGUMENTS**

Claims 2, 3, and 8 are currently pending. Claims 1, 4-7, and 9 were canceled in a previous response to Office Action. Claims 10-38 have been added with this Supplemental Response. With the addition of these new claims, claims 2, 3, 8, and 10-38 will be pending in this application.

New claims 10-38 contain no new matter, as support for these claims can be found throughout the application. Support for new claims 10-16, 31 and 32, drawn to V antigen immunogenic polypeptides, and 17-23, drawn to V antigen-based vaccines, can be found throughout the application, *e.g.*, at page 8, line 23 to page 12, line 13, and at page 14, line 7 to page 17, line 7, and at page 17, line 17 to page 18, line 21, as well as at Fig. 1. Support for new claims 24-26, drawn to polyclonal antiserum specific to a recombinant V antigen of the invention, and new claims 27 and 28, drawn to passive immunity-conferring anti-recombinant V antigen antisera, as well as new claim 29, and 30, drawn to methods of treating or preventing a *Yersinia* infection using passive immunity conferring anti-recombinant V antigen antisera, can be found throughout the application, *e.g.*, at page 12, line 13 to page 14, line 5, at page 17, lines 1-16, at page 18, line 23 to page 19, line 11, and at Fig. 5. Support for new claims 33-36, drawn to methods of controlling or treating a *Y. pestis* infection, can be found throughout the application, *e.g.*, at page 19, line 13 to page 21, line 6. Finally, support for new claims 37 and 38, drawn to nucleic acids encoding immunogenic V antigen polypeptides, can be found throughout the application, *e.g.*, at page 8, line 23 to page 10, line 16, and at Fig. 1.

Applicants have added new claims 10-38 to better reflect the scope of the invention, which provides pure, recombinant V antigen polypeptides, and corresponding encoding nucleic acids, for use, *e.g.*, in preparing vaccines against *Yersinia* infectious agents. Applicants note that the instant invention provides the first support for the immunogenic potential of the isolated V antigen for targeting *Yersinia* infections immunologically. Applicants further note that the invention supports the immunogenic potential of V antigen polypeptides, as they have

demonstrated that first 67 N-terminal amino acids of the V antigen protein are not required for antigenic protection.

Applicants respectfully note that certain earlier-prosecuted claims required a V protein fusion with a protein A fragment. Indeed, the application describes purification of truncated V antigen polypeptides fused to a portion of protein A. The specification further teaches that the protein A fragment facilitates the purification of the V protein fragment using an IgG column. As one with skill in the art is aware however, and as the application teaches on page 19 (lines 6-11), the presence of the protein A fragment in the fusion protein provides no protection against *Y. pestis* infection. The skilled artisan would therefore appreciate that, given the immunogenic independence from the protein A fusion tag, other fusion polypeptides (*e.g.*, poly His or GST (Glutathione S-transferase)) known in the art could readily be substituted for protein A. Therefore, the invention provided is independent of any particular fusion tag. Furthermore, since the efficient purification of a truncated V antigen away from a protein A fusion tag is taught, and since other methods for efficient purification away from protein tags are known in the art, the skilled artisan would appreciate that the invention supports the isolation and use of immunogenic polypeptide fragments of full-length V antigen. Accordingly, certain new claims included herein have a scope commensurate with one aspect of the invention, *i.e.*, isolated, truncated V antigen polypeptides and their use to treat or prevent *Yersinia* infections, including bubonic plague.

**CONCLUSION**

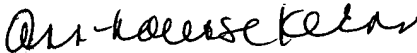
Claims 2, 3, and 8 are currently pending. Claims 1, 4-7, and 9 were canceled in a previous action. Claims 10-38 have been added. With the addition of these new claims, claims 2, 3, 8, and 10-38 will be pending in this application. Applicant submits that the claims, as they currently stand, are in condition for allowance.

Applicants believe that no fees are required with the instant filing. However, in the event that any additional fees are required to maintain the pendency of this application, the Commissioner is hereby authorized to charge any such fees, or to credit any overpayments, to Attorney Deposit Account No. 08-0219.

Applicants respectfully request that the Examiner reconsider the application and claims in light of the foregoing amendments and remarks. If the Examiner believes that a telephone interview would be help expedite the successful prosecution of the claims, the undersigned attorney would be grateful for the opportunity to discuss any outstanding issues.

Respectfully submitted,  
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